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American Megatrends

PreBoot Provisioning Solutions with UEFI

UEFI Spring Plugfest – May 18-22, 2015

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Agenda

- Introduction
- Building on Top of the UEFI Specification
- Expanding Further
- Call to Action

PreBoot Provisioning Solutions with UEFI

Introduction

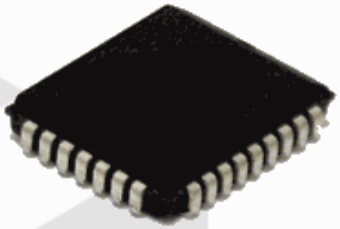
Current Challenges for Provisioning

- UEFI systems need to be configured to meet datacenter and corporate policies
- Systems crash in the field and current recovery mechanisms don’t always fit
- As OS and firmware updates come out, they need to be quickly and effectively deployed globally
- Provisioning utilities on a disk are susceptible to corruption and malicious software

Why cant a feature rich provisioning be developed for use in firmware?

Firmware Based Provisioning

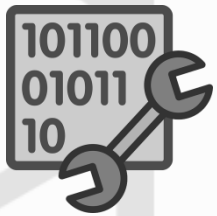
- Firmware based provisioning is already included in the flash part
  - External media provisioning still needs factory provisioning
- Firmware has access to information and interfaces that is not available to external applications
- As the root of trust, the firmware is the most secure part of a platform



UEFI 2.5 Makes it Easier

- FMP has been expanded to include support for updating the firmware of any device on a system in a common manner

- System configuration data has been expanded so configuration data layout can be known outside of the firmware itself



- HTTP support has been expanded to an entire client stack to allow full network access and even access to the internet

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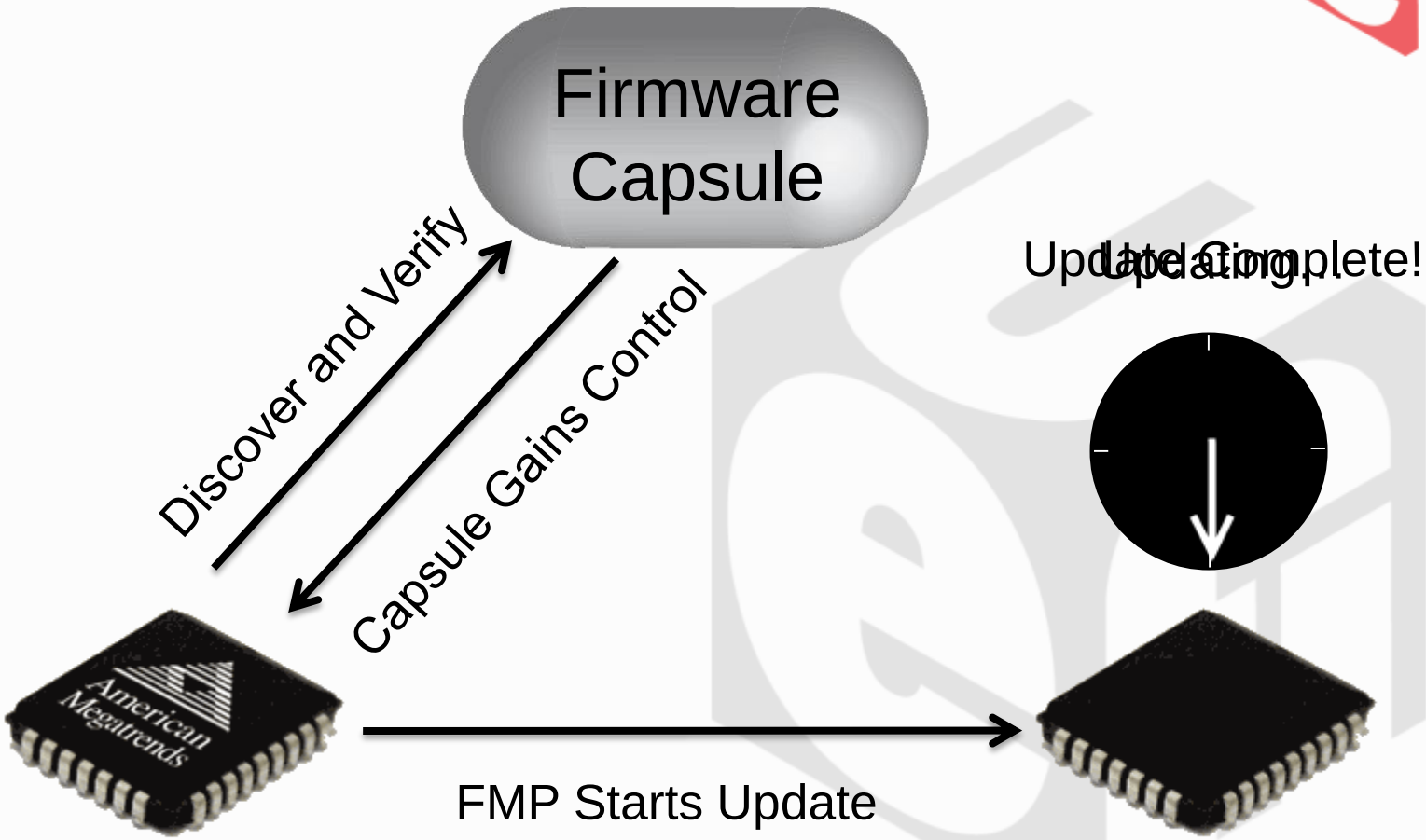
Building on Top of the UEFI Specification

Firmware Management Protocol (FMP)

- Capsules can now be code and data!
  - Saving space and boot time for the firmware
- FMP allows external devices to manage the security of their own firmware
- Updating via a capsule is the most secure method available today

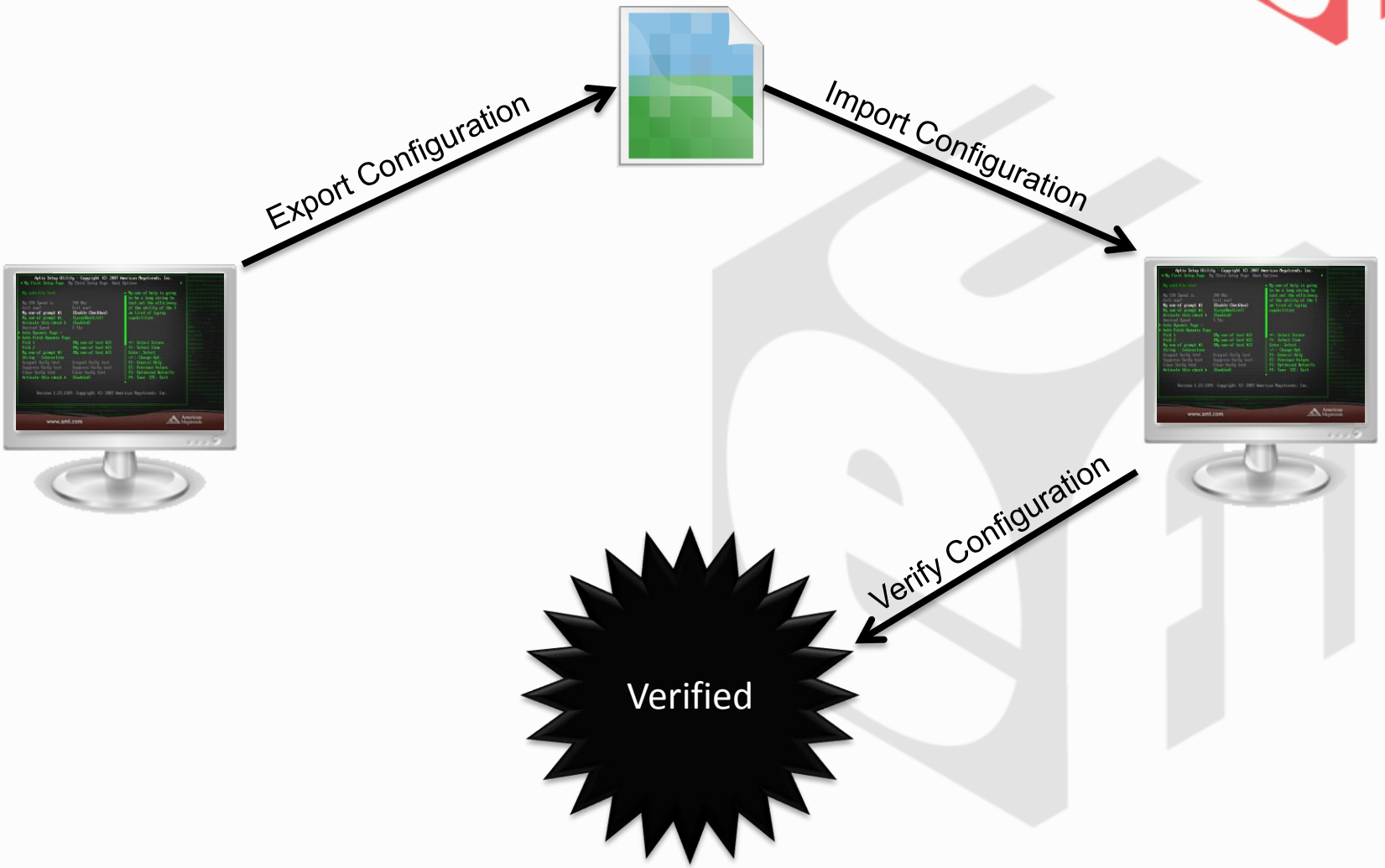
FMP Update in Action



System Configuration Data

- X-UEFI language has allowed a common mapping of configuration options to a master list
- New mappings allows:
  - Migration of current configuration during firmware updates
  - Current configuration can be migrated to other systems more easily
  - Common look and feel for different systems
  - External agents can modify specific settings through OEM proprietary methods
- OpRom vendors should provide similar mappings

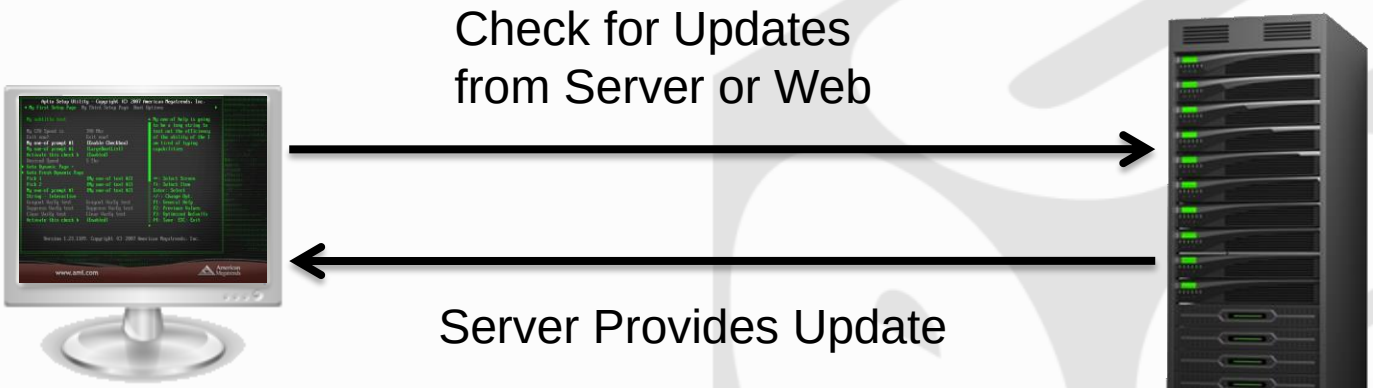
System Configuration Data Migration



HTTP Support

- UEFI 2.5 has added a complete client side HTTP stack allowing network access to:
  - Do system firmware updates
  - Check for any needed system configuration changes
  - Download any OS images or updates
- Server for providing images can be located in a datacenter, corporation or by the ODM
  - Throw away the recovery CD and recovery partition!

HTTP Update BIOS/Configuration/OS



Advanced Networking Support

- For the security conscious, UEFI's HTTP support can be expanded
- VPNs can be setup through IPSec
- Services like KMS implemented on top of advanced UEFI network interfaces such as HTTP and TLS will provide an implementation that is free from packet snooping

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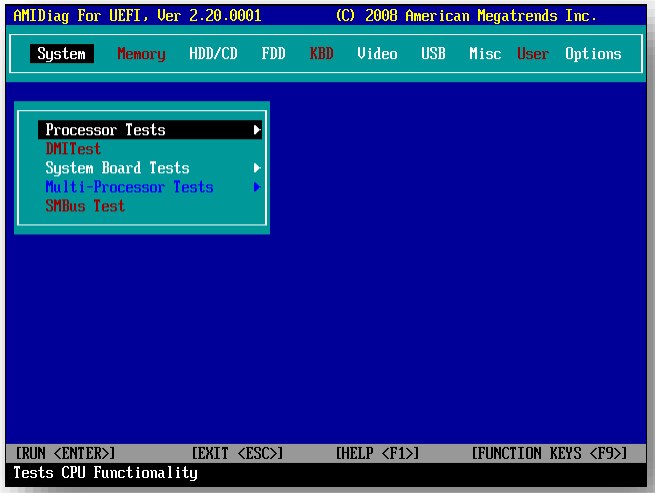
Building Further

System Diagnostics

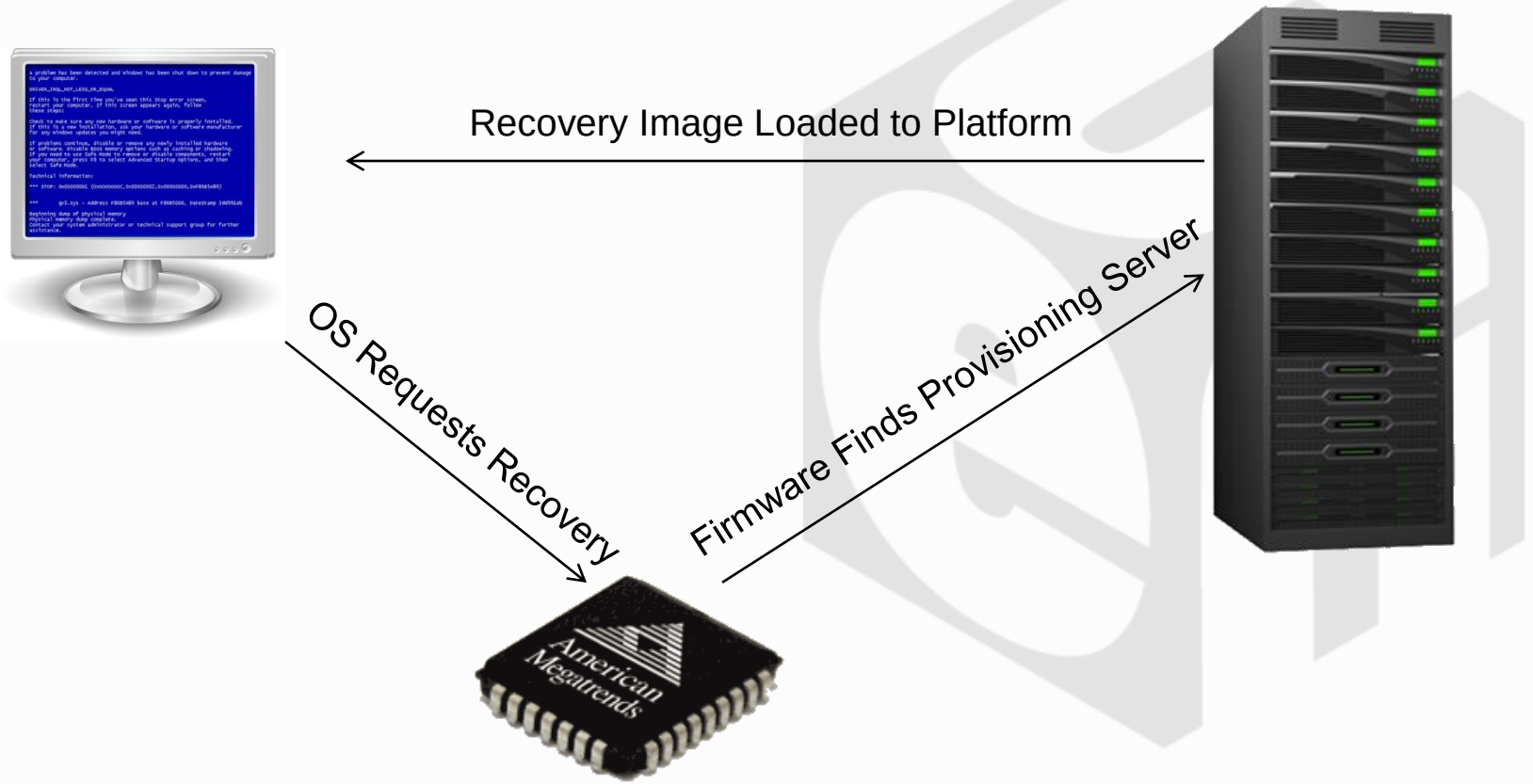
- UEFI provides many interfaces to create diagnostics tools



IHVs should be providing the EFI_DRIVER_DIAGNOSTICS2_PROTOCOL to automatically extend platform diagnostics support

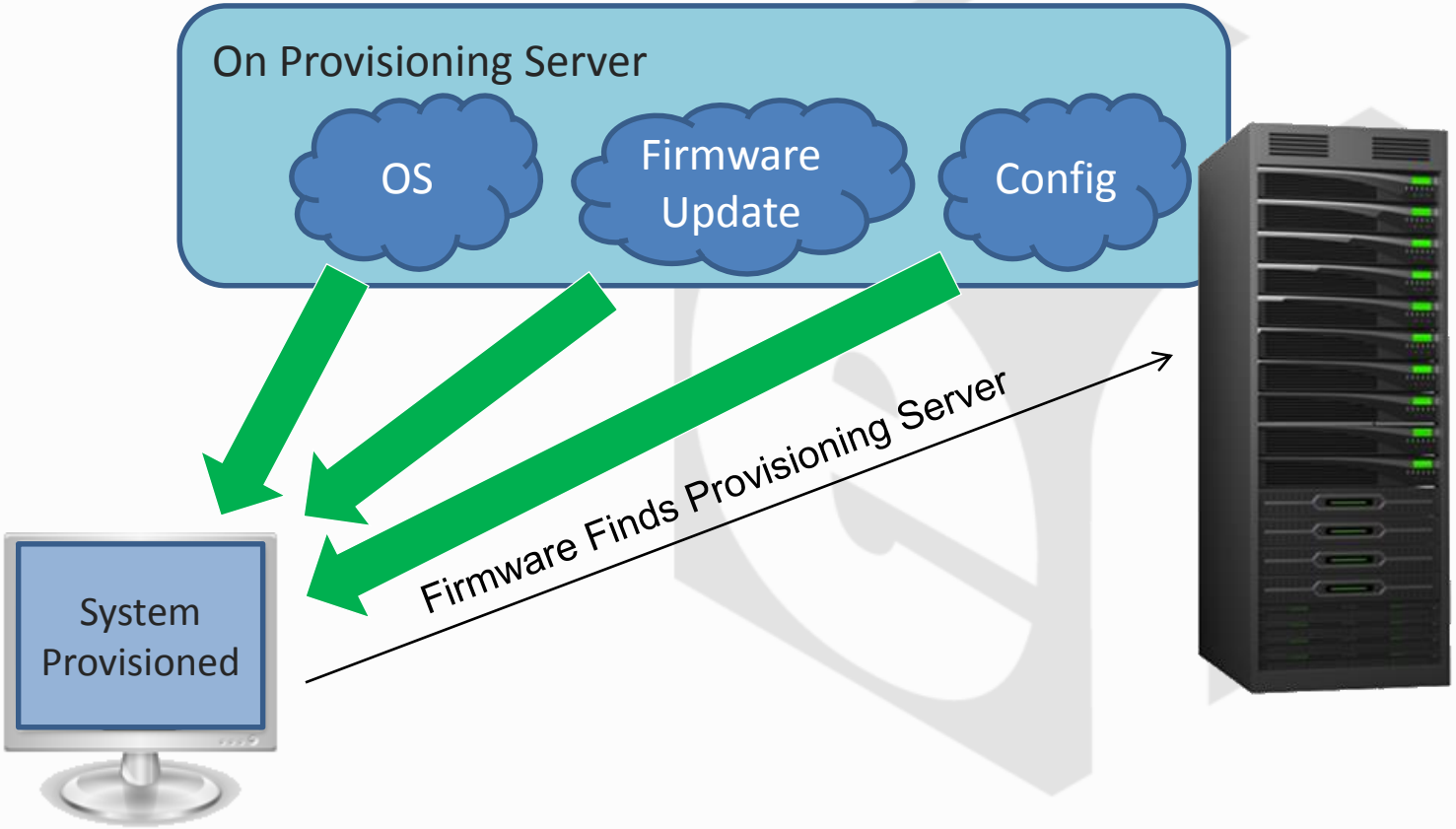
System Auto-Recovery

- OS can inform firmware of crash to auto-initiate recovery though EFI_OS_INDICATIONS_START_PLATFORM_RECOVERY bit



System Auto-Provision

- As systems arrive from factory they can auto-provision at the customer site



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Call to Action

Call to Action

- Add-on card vendors and third party HW vendors should provide FMP and diagnostics capabilities
- All firmware that uses system configuration methods should produce x-UEFI mappings
- OEMs should build industry ready solutions for configuration, provisioning, recovery and diagnostics
  - OEMs need to be solution providers!

Thanks for attending the
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For more information on the Unified EFI Forum and UEFI Specifications, visit http://www.uefi.org

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